RECEIVER WITH AUTOMATIC GAIN CONTROL THAT OPERATES WITH MULTIPLE PROTOCOLS AND METHOD THEREOF

Abstract of the Disclosure

An automatic gain control (AGC) method and circuit (10) within a receiver uses a digital state machine (26) to implement the AGC function independent from interaction with a host processor (36) and for multiple modulation protocols without duplicating circuitry. Modulation protocol and parameters for any of various gain responses are stored in a register (29). Multiple states, each corresponding to a predetermined range of RF input signal strength, are stored in the register. Each state contains parameters that determine a gain control signal for controlling a variable gain amplifier (16). The states are independent and may be selectively disabled to create asymmetric responses. Within any state, an adaptable number of iterations may be set to implement a different update rate or step size after a predetermined number of closed loop gain change iterations has not resulted in a transition to a state that represents a desired output gain.